Foreword: Welcome

ACTIA, specialist in onboard electronics for industrial vehicles, is marketing the digital tachograph SmarTach® in Europe. Compliant with European Regulation No. 3821/85 Annex 1B, SmarTach® is a reliable and secure tool designed to replace paper disk tachographs. A real partner on the road, SmarTach® gives you information about your time spent driving and resting, and helps you to manage your working day while respecting the regulation.

You can view all your information on the screen, or print it out on paper.

There is a network of workshops spread throughout Europe to maintain the equipment and supply accessories and consumables.

Hit the road with SmarTach®!

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English

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English

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1. In this Manual

1.1 Subject

This document explains how drivers and companies shall use SmarTach®. You will also find the general instructions you need to bear in mind while using SmarTach® and your smart card.
This document is based on the amended EEC Regulation No. 3821/85 and especially its Annex 1B and Regulation No. 3820/85.

1.2 Symbols Used

The following symbols have been used in the present document:

Symbol	Description
	Prerequisites
	Note
	Reference to another part of the present document or to other documents
	Warning for the reader

Table 1

1.3 Terminology

1.3.1 Abbreviations

EEC
European Economic Community

UTC
Universal Time Co-ordinated

1.3.2 Glossary

Annex 1B
Annex 1B to the amended EEC Regulation No. 3821/85.

Authenticity
Assurance that the source and content of data are truly that indicated.
Assurance that the tachograph, smart card and speed sensor are truly that indicated.

Confidentiality
Ownership of data that is not to be revealed.

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Continuous driving time
The continuous driving time is computed as the current accumulated driving times of a particular driver, since the end of his last AVAILABILITY or BREAK/REST or UNKNOWN period of 45 minutes or more (this period may have been split in several periods of 15 minutes or more). The computations involved take into account, as needed, past activities stored on the driver card. When the driver has not inserted his card, the computations involved are based on the data memory recordings related to the current period where no card was inserted and related to the relevant slot.

Cumulative break time
The cumulative break from driving time is computed as the current accumulated AVAILABILITY or BREAK/REST or UNKNOWN times of 15 minutes or more of a particular driver, since the end of his last AVAILABILITY or BREAK/REST or UNKNOWN period of 45 minutes or more (this period may have been split in several periods of 15 minutes or more). The computations involved take into account, as needed, past activities stored on the driver card. Unknown periods of negative duration (beginning of unknown period > end of unknown period) due to time overlaps between two different recording equipments, are not taken into account for the computation. When the driver has not inserted his card, the computations involved are based on the data memory recordings related to the current period where no card was inserted and related to the relevant slot.

The work activity is not considered as an interruption of the cumulative driving time. In case of break, the driver shall manually select the Break/ Rest mode, otherwise he may exceed his cumulative driving time.

Data memory
An electronic data storage device built into SmarTach®.

Downloading
Copying together with digital signature of a part or of a complete set of stored data from the data memory of the vehicle or from the memory of a tachograph card.

Event
Abnormal operation detected by SmarTach® which may come from a fraud attempt.

Fault
Abnormal operation detected by SmarTach® which may come from an equipment malfunction or failure.

Integrity (for data)
Characterises the fact that data has been modified or destroyed in an authorised manner.

Member State
European Union Member State.

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SmarTach®
Name for ACTIA digital tachograph. Vehicle unit forming part of the recording equipment described by Annex 1B (defined above). Electronic system that records and stores driver and co-driver activities and vehicle parameters.

SmarTach® sensor
Part of the recording equipment, providing a signal that is representative of vehicle speed and/or distance travelled. It corresponds to the motion sensor defined in the regulation. Also called speed sensor. SmarTach® can use its SmarTach® sensor or another compatible and type approved sensor.

Tripmeter
Counter totalling the distance covered by the vehicle that may be reset to zero by the driver.

Odometer
Counter totalling the total distance covered by the vehicle since its first being brought onto the road.

UTC time
Universal Time Co-ordinated is the international reference time. It was formerly known as Greenwich Mean Time (GMT).

Stand-by mode
As an energy-saving measure, when SmarTach® is in stand-by mode, some functions are not available, e.g. backlighting of the front panel.

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2. General Presentation of SmarTach®

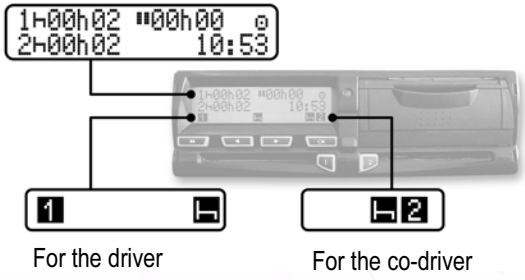
2.1 General Features

SmarTach® is a digital tachograph that replaces the traditional paper disk tachograph. This new system records, stores, displays, prints and outputs data related to driver activities. Such data must now be stored on smart cards and in SmarTach® memory.

SmarTach® users identify themselves with their personal card, which also grants access to the appropriate functions and data. They will appreciate its ease of operation, based on interactive menus and only 6 keys.
SmarTach® also detects events and faults, and warns users accordingly. SmarTach® provides greater protection against manipulation, with the aim of ensuring social legislation enforcement and improving road safety.

2.2 Interfaces

2.2.1 Display



For the driver

For the co-driver

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The display can be divided into two main areas, as follows:

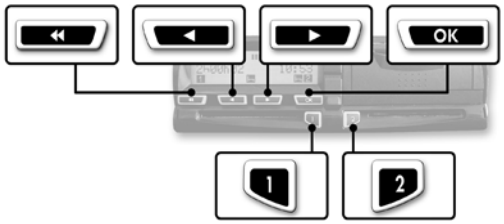
Areas	Part/Pictograms	Description
First two lines		Displays information and menus.
Third line	Left part	Dedicated to the driver
	Right part	Dedicated to the co-driver
	1	Indicates that a card has been inserted in the left slot (slot for the driver).
	2	Indicates that a card has been inserted in the right slot (slot for the co-driver).
		Indicates the driver current activity.
		Indicates the co-driver current activity.

Table 2

When working as a crew, each user shall use the slot that is dedicated to their own activity.

SmarTach® display uses pictograms that are listed in **Section 6.10 List of Pictograms Used in this Manual**.

2.2.2 Keys



When you press a key, a beep may sound.

To activate/deactivate beeps, refer to **Section 4.1.5 Keyboard Beep**.

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All operations are possible via the following keys:

Key	Action	Key	Action
(Escape)	Press to • cancel the current action. • return to the upper level menu.	OK	Press to • go to a lower level menu. • answer Yes. • confirm a choice. • acknowledge warnings.
(Back)	Press to • go back to the previous item or menu. • change the value you are entering. Hold down to • change the current value more quickly.	(Forward)	Press to • go forward to the next item or menu. • change the value you are entering. Hold down to • change the current value more quickly.
1	Press to • declare or modify your activities as driver. Hold down to • insert or withdraw your driver card from the left slot.	2	Press to • declare or modify your activities as co-driver. Hold down to • insert or withdraw your driver card from the right slot.

Table 3

2.2.3 Keyboard Beep

SmarTach® gives you an answer about your current action:

- One beep for a positive answer.
- Two consecutive beeps for a negative answer.

To activate/deactivate beeps, refer to **Section 4.1.5 Keyboard Beep**.

2.2.4 Warning Beep

When the warning light flashes, a beep may sound.
The warning beep sounds several times when:

- A warning has been triggered.
- No key is pressed for more than 30 seconds during manual entry of activities.

To activate/deactivate beeps, refer to **Section 4.1.6 Warning Beep**.

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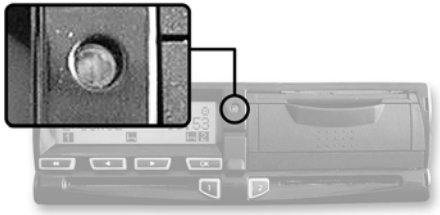
2.2.5 Warning Light



The warning light flashes to warn you that:

- SmarTach® has detected an event or a fault.

The warning light flashes to draw your attention to the fact that:

- you have requested an action not possible at that moment,
- the manual entry of activities is not finished.

When the warning light flashes, a beep may sound.

To activate/deactivate beeps, refer to **Section 4.1.6 Warning Beep**.
To read more about Manual entry of activities, refer to **Section 4.7 How to Enter Activities Manually**.

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3. How to Use SmarTach® - Basic Functions

3.1 Recommendations

Drivers and employers must use SmarTach® in conformance with all instructions found in modified EEC Regulation No. 3821/85 and in this manual.

SmarTach® is a secured system:

- the data to be measured and recorded and then to be checked by control authorities must be available and reflect accurately the activities of controlled drivers and vehicles in terms of driving, work, availability and rest periods and in terms of vehicle speed.
- it is able to export data in such a way as to allow for later verification of their integrity and authenticity.

To meet these security objectives:

- each driver card is strictly personal, and each driver is allowed to possess, at one time, one valid driver card only.
- periodic inspections of SmarTach® must be carried out under any condition defined in modified EEC Regulation No. 3821/85 (and at least once within two years of the last inspection).

You must read completely Section 6.2 General Instructions, where general instructions for SmarTach® use can be found.

3.2 For Different Users and Smart Cards

SmarTach® provides selective access rights to data and functions according to user type:

- Driver
- Company
- Workshop
- Controller

Refer to **Section 6.7 Access Rights to Data** and **Section 6.1 SmarTach® Functions**.

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Each card identifies the type of user:

Smart Card	Description	Colour
Driver Card	• Issued by the authorities of a Member State to a particular driver. • Identifies the driver. • Records the driver activity data.	White
Company Card	• Issued by the authorities of a Member State to the owner or holder of vehicles fitted with recording equipment. • Used by the fleet manager or the owner of the transport company. • Identifies the company. • Allows data belonging to this company to be locked. • Allows the data to be displayed, downloaded and printed, provided that it has not been locked by another company.	Yellow
Workshop Card	• Issued by the authorities of a Member State. • Used by a recording equipment manufacturer, a fitter, a vehicle manufacturer or workshop, approved by that Member State. • Identifies the cardholder. • Allows the recording equipment to be tested, calibrated and/or downloaded.	Red
Control Card	• Issued by the authorities of a Member State to a national competent control authority. • Used by the relevant authorities. • Identifies the control body and possibly the control officer. • Gives access to the data stored in the data memory or in the driver cards for reading, printing and /or downloading.	Blue

Table 4

Table 4 (continued)

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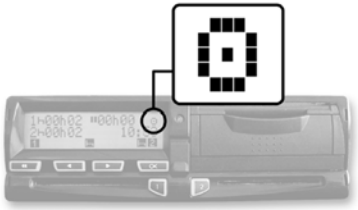
3.3 Mode of Operation

SmarTach® switches automatically to the relevant mode of operation according to the type of card inserted. This mode is indicated by a specific pictogram.



Users	Mode of Operation	Pictograms
Driver	Operational Mode	⊙
Company	Company Mode	⌂
Workshop	Calibration Mode	T
Controller	Control Mode	⊓

Table 5

If the mode of operation pictogram flashes continuously, the vehicle must go to the workshop to be checked.

For more details, refer to **Section 6.7 Access Rights to Data** and **Section 6.1 SmarTach® Functions**.

3.4 How to Insert your Smart Card

- The vehicle must be stationary.
- The ignition switch must be turned on (the engine does not need to be started).
- No printing operation must be in progress.
- No downloading operation must be in progress.

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To insert your card, proceed as follows:

1. Hold down or to open the flap before inserting your smart card.
2. When the slot is ready for card insertion, the corresponding pictogram 1 or 2 flashes.
3. Insert your card, with the chip facing up and the arrow towards SmarTach®, into the appropriate slot:
   - left slot: driver
   - right slot: co-driver
   - any slot: company

4. Slide it in gently up to the stop.

> **Do not force. Let the mechanism draw in the card.**

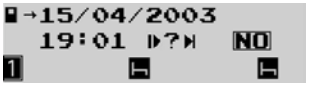
5. The slot closes automatically.

   The following display appears to inform you that SmarTach® reads the card. During operation, symbols move **/ - **.

6. After a moment, your name appears. For a driver card insertion, you must wait for this screen before starting to drive.

> If you inserted a company card, skip to 9.

7. If you inserted a driver card, SmarTach® goes to the next display.



At this point, you can enter your activities manually.

> To enter activities manually, refer to **Section 4.7 How to Enter Activities Manually**.

Press to not enter activities manually.

8. If you are not starting your daily work period, press to not enter the location.

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If you are starting your daily work period, you must enter the relevant location:

- to confirm the country displayed by default (here F for FRANCE), press OK,
- to select a different country, press ◄ or ►, and then press OK.

For Spain, you have to specify the region:
Select E for Spain and press OK.

Press ◄ or ► as many times as necessary to go to the relevant region.
Press OK to validate.

Refer to **Section 6.8 List of Countries and Regions**.

- Then press OK to confirm the selected starting location for the period.

9. A display appears while the data are processed.

10. Your card has been inserted correctly.
A default display from the first level appears.

In a few moments, counters are updated according to the data stored on your card.

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English

3.5 How to Select your Current Activity

Driver and co-driver activities are continuously displayed on the third line of the screen.

- The vehicle must be stationary.
- No card withdrawal operation must be in progress. Otherwise, wait until your card has been withdrawn.
- There must be no event/fault message displayed. Otherwise, press OK to acknowledge the warning.
- No downloading operation must be in progress.

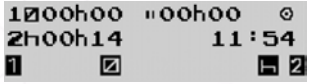
Refer to **Section 3.7 How to Acknowledge Warnings**.

To select your current activity, proceed as follows:

1. Press:

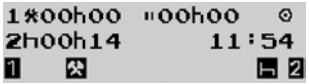
- 1 to change your activity as driver to the next one.
- 2 to change your activity as co-driver to the next one.

In the following example, the selected driver activity is AVAILABILITY and co-driver activity is BREAK/REST.



The third line shows selected driver activities.

2. The driver activity switches to WORK.
The co-driver activity remains BREAK/REST.



Any declaration of activity is taken into account as soon as you press the corresponding key.

- When the vehicle is moving, SmarTach® automatically switches driver activity to DRIVING and co-driver activity to AVAILABILITY.
- When the vehicle stops, SmarTach® automatically switches driver activity to WORK.
- is never displayed in the right part dedicated to the co-driver.

Activity	Pictogram
AVAILABILITY	
WORK	
BREAK/REST	
DRIVING	

Table 6

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3.6 First Level Displays

There are eight different displays at this level:

- Four main displays that are permanently displayed when you are not executing any particular action.
- Four information displays, showing the most useful information.

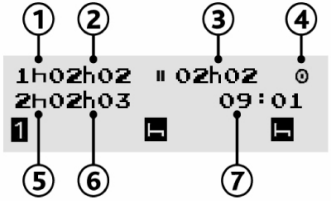
3.6.1 How to Select a Main Display

After having inserted your card and selected your current activity, you can select a main display. This display will automatically appear again once an operation is completed.

1. To go from one display to another, press ◄ or ►.
2. Four different main displays can be permanently displayed, each providing various types of information.
3. Waiting a few seconds without any action on the keyboard, SmarTach® will automatically set the current display as default permanent Main Display.

Information about	Refer to
Driver activities - The vehicle is stopped. - The vehicle is moving.	 Example 1 Example 1 bis
Partial mileage	Example 2
Total mileage	Example 3
Vehicle speed	Example 4

Table 7



Example 1
Driver activities
(The vehicle is stopped)

No	Description	In example 1
1	Your current activity as driver	Break/Rest
2	Duration of your current activity as driver	2h and 2min
3	Cumulative break time	2h and 2min
4	SmarTach® mode of operation	Operational mode
5	Your current activity as co-driver	Break/Rest
6	Duration of your current activity as co-driver	2h and 3min
7	Local time	09:01

Table 8

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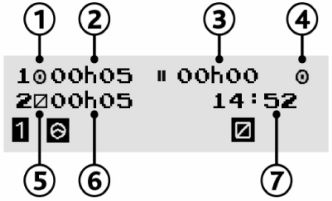
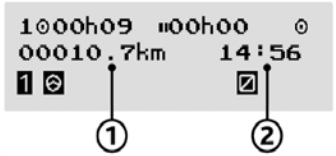


Example 1 bis
Driver activities
(The vehicle is moving.)

No	Description	In example 1 bis
1	Your current activity as driver	Driving
2	Your continuous driving time as driver	5min
3	Cumulative break time	0h and 0min
4	SmarTach® mode of operation	Operational mode
5	Your current activity as co-driver	Availability
6	Duration of your current activity as co-driver	5min
7	Local time	14:52

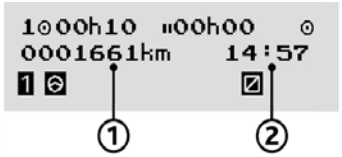
Table 9



Example 2
Partial mileage

No	Description	In example 2
	First line: same as in Example 1 bis	
1	Partial mileage (Tripmeter)	10.7 km
2	Local time	14:56

Table 10



Example 3
Total mileage

No	Description	In example 3
	First line: same as in Example 1 bis	
1	Total mileage	1661 km
2	Local time	14:57

Table 11

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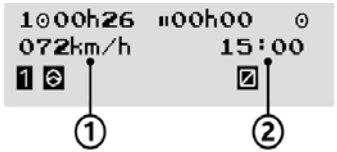

Example 4
Vehicle speed

No	Description	In example 4
	First line: same as in Example 1 bis	
1	Vehicle speed	72 km/h
2	Local time	15:00

Table 12

3.6.2 How to Display the Most Useful Information

After having inserted your card and selected your current activity, you can access useful information through different displays.

1. Press ◄ or ► to go from one information display to another.
2. Four different information displays are available, each providing various types of information on the first two lines.
3. Waiting a few seconds without any action on the screen, SmarTach® will automatically return to the Main Display previously chosen.

Refer to **Section 3.6.1 How to Select a Main Display.**

Information about	Refer to
Continuous driving time and cumulative break time	Example 5
Weekly and semi-weekly driving time	Example 6
UTC time	Example 7
Summary of driver activities	Example 8

Table 13

English

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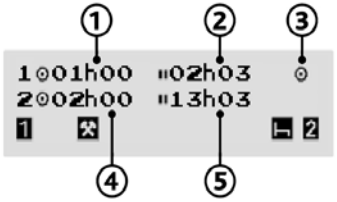
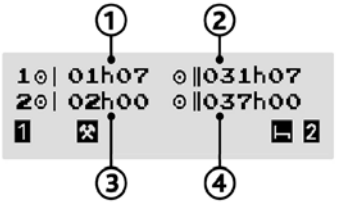


Example 5
Continuous driving time
Cumulative break time

No	Description	In example 5
1	Your continuous driving time as driver	01h00
2	Your cumulative break time as driver	02h03
3	Mode of operation	Operational mode
4	Your continuous driving time as co-driver	02h00
5	Your cumulative break time as co-driver	13h03

Table 14



Example 6
Driving time for one week
Driving time for two weeks

No	Description	In example 6
1	Your accumulated driving time as driver for current week	01h07
2	Your accumulated driving time as driver for current week and previous week (complete)	031h07
3	Your accumulated driving time as co-driver for current week	02h00
4	Your accumulated driving time as co-driver for current week and previous week (complete)	037h00

Table 15

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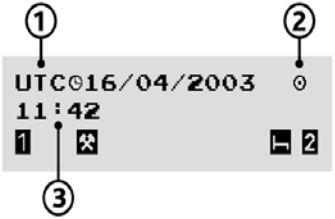
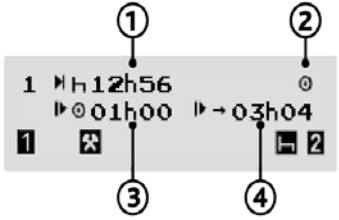


Example 7
UTC time

No	Description	In example 7
1	UTC date	16/04/2003
2	Mode of operation	Operational mode
3	UTC time	11:42

Table 16



Example 8
Summary of driver activities (available in some SmarTach® versions)

No	Description	In example 8
1	Time remaining before you should start your daily rest period as driver	12h56
2	Mode of operation	Operational mode
3	Your accumulated driving time for the current day as driver	01h00
4	Current daily work period amplitude	03h04

Table 17

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3.7 How to Acknowledge Warnings

3.7.1 Single Warning

1. When SmarTach® detects an event or a fault, it triggers a warning:
   - the warning light flashes,
   - beeps sound (if activated),
   - a warning message is displayed. It notifies the cause of the warning.

2. Wait for 30 seconds or press any key to stop flashes and beeps in this warning phase.

> The warning light remains on (if the cause of the warning remains).

3. Secondly, press OK to acknowledge the warning and indicate that you are aware of the cause of the warning.
4. The warning message disappears.

> To turn off the warning light, you may have to execute specific actions, as indicated in **Section 6.9 List of Warnings**.

3.7.2 Simultaneous Warnings

1. Every time SmarTach® detects an event or a fault, it triggers a warning.
2. If other events or faults occur before you have acknowledged the first one, press OK as many times as necessary until the main display appears again.
3. A first press on OK stops flashes and beeps for the last warning if it has happened less than 30 seconds before. Another press acknowledges the cause of the triggered warnings.

> Refer to **Section 6.9 List of Warnings** to know what to do according to the warning cause detected.

4. SmarTach® counts warnings coming from a same cause. This counter is available in the top right corner of the current display. In this example, SmarTach® has detected 6 driving without an appropriate card events.

5. Acknowledgement in this case is grouped. A first press on OK will correspond to acknowledgements for the number of warnings from the same cause.

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6. SmarTach® can cumulate display of different grouped warnings or alternate grouped and single warnings. SmarTach® sorts them from newest to oldest. Each one is shown if the previous one is acknowledged.
7. Main Display becomes available again if all detected warnings have been correctly acknowledged.

3.8 How to Withdraw your Smart Card

- The vehicle must be stationary.
- The ignition switch must be turned on (the engine does not need to be started).
- No printing operation must be in progress.
- No downloading operation must be in progress.

To withdraw your card, proceed as follows:

1. Hold down
   - 1 to withdraw your card from the driver slot.
   - 2 to withdraw your card from the co-driver slot.
2. The number of the selected slot and your name are displayed. SmarTach® prompts you to confirm the card withdrawal request.

3. Press OK to confirm
   Press ◄◄ to cancel withdrawal operation. The last displayed information reappears.
4. If you are not finishing your daily work period, press ◄◄ to not enter the location.
   If you are finishing your daily work period, you must enter the location where you are finishing your daily work period:
   - to confirm the country displayed by default (here F for FRANCE), press OK,
   - to select a different country, press ◄ or ►, and then press OK.

For Spain, you have to specify the region:
Select E for Spain and press OK.

Press ◄ or ► as many times as necessary to go to the relevant region.
Press OK to validate.

Refer to **Section 6.8 List of Countries and Regions**.

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- Then press OK to confirm the selected location for the period.

5. SmarTach® updates data on the smart card and ejects it.

This operation can take some time to finish.
The selected default display from the first level appears.

- The slot remains open for 3 minutes to proceed with a new card insertion, if necessary. Afterwards, if ignition switch is still on, the slot closes automatically.
- The slot also closes automatically if the vehicle is driven.
- For dangerous goods vehicles the user must ensure that slots are closed before opening the master switch of the vehicle and manipulating the dangerous goods.

Refer to **Section 3.4 How to Insert your Smart Card**.
Refer to **Section 5 SmarTach® for Dangerous Goods Vehicles**.

3.9 SmarTach® Behaviours

3.9.1 Ignition Switch OFF

While ignition switch is turned off, SmarTach® is in stand-by mode, with its screen mainly off.
SmarTach® displays only the third line concerning the driver and co-driver pictograms.

Refer to **Section 2.2.1 Display**.

SmarTach® wakes up every 30 minutes or following an action on the keyboard.
During wake-up, it is possible to change activities or to check data on the display.
SmarTach® remains in this state for a few seconds before going back to stand-by mode.

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3.9.2 Ignition Switch ON

When ignition switch is turned on, SmarTach® shows presentation displays for a few seconds before going to the selected main display.

Refer to **Section 3.6 First Level Displays**.

One important presentation display summarizes the owners of cards inserted in slots 1 and 2. This display is useful for driver or co-driver functions in crew driving as well as to remember not to forget to insert a card before driving.

When ignition switch is turned off, the main display remains for a few seconds before SmarTach® goes into stand-by mode.

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English

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4. How to Use SmarTach® - Advanced Functions

The following table explains how to go from one level of menus to another:

> The vehicle must be stationary to access the second level of menus.

From	To	Press
First level	Second level	OK
Second level	First level	◄◄

Table 18

> SmarTach® automatically goes back to the upper level if no action is executed for more than 20 seconds.

4.1 How to Set SmarTach®

The following sections describe functions available to both drivers and companies.

4.1.1 Printouts Time Reference

SmarTach® allows you to print your tickets referring to UTC time reference or to Local time currently set. Default setting is printing in UTC time.

This function is helpful for providing you with a ticket that is easy to understand. Note that these printouts may not be provided to authorities for control; they are for driver use only.

Printouts made while SmarTach® is in control mode will automatically be in UTC time reference.

To set printing time, proceed as follows:

1. In the first level of menus, press OK to go to the second level.

2. Press ◄ or ► as many times as necessary to go to SETTINGS.

3. Press OK to select SETTINGS.

English

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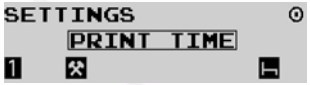
4. Press ◄ or ► as many times as necessary to go to PRINT TIME.



5. Press OK to select PRINT TIME.
6. Press OK to validate the change or ◄◄ to exit without change.

In this example, press OK to choose printing in local time reference.

7. The adjustment is taken into account.
8. The last selected main display appears.

4.1.2 Local Hour/UTC Time

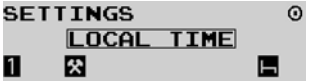
You may set the difference between UTC time and local time, unless the workshop has deactivated this function.

To set the difference between UTC time and local time, proceed as follows:

1. In the first level of menus, press OK to go to the second level.

2. Press ◄ or ► as many times as necessary to go to SETTINGS.

3. Press OK to select SETTINGS.
4. Press ◄ or ► as many times as necessary to go to LOCAL TIME.



5. Press OK to select LOCAL TIME.
6. The difference between local time and UTC time is displayed.

7. Press ◄ or ► to set the difference.

Local time must be set according to UTC time by steps of plus or minus 30 minutes.
Limits are -23h30 and +23h30.

8. Press OK to validate the change (+01h00 in this case) or ◄◄ to exit without change.

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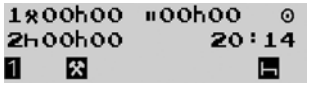
9. Local time adjustment is taken into account.
10. The last selected main display appears.
    In the following example, local time has been moved forward by one hour.



4.1.3 UTC Time

SmarTach® must be on time. You can adjust SmarTach® UTC time under the following conditions:

- UTC time can be adjusted by a maximum of one minute.
- Only one adjustment can be made within 7 days. If you try to adjust UTC time in between, a message notifies you that it is not possible.

To adjust UTC time, proceed as follows:

> UTC time must not have been adjusted within the 7 previous days.

1. In the first level of menus, press OK to go to the second level.

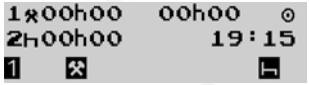
2. Press ◄ or ► as many times as necessary to go to SETTINGS.

3. Press OK to select SETTINGS.
4. Press ◄ or ► as many times as necessary to go to UTC TIME.

5. Press OK to select UTC TIME.
6. UTC time and the initial adjustment (+0min) are displayed.

7. To modify UTC time:
   - press ► to set the internal clock forward +1min.
   - press ◄ to set the internal clock back -1min.
8. Press OK to validate the change or « to exit without change.

9. The adjustment is taken into account.
10. The last selected main display appears.
    In the following example, UTC time has been moved forward by one minute.



4.1.4 Contrast

To adjust the contrast of the display, proceed as follows:

1. In the first level of menus, press OK to go to the second level.

2. Press ◄ or ► as many times as necessary to go to SETTINGS.

3. Press OK to select SETTINGS.
4. Press ◄ or ► as many times as necessary to go to CONTRAST.

5. Press OK to select CONTRAST.
6. Press ◄ or ► to increase or decrease the contrast for display.

7. Press OK to validate the change or « to exit without change.
8. Contrast change is taken into account.
9. The last selected main display appears.

4.1.5 Keyboard Beep

To activate or deactivate the keyboard beep, proceed as follows:

1. In the first level of menus, press OK to go to the second level.

2. Press ◄ or ► as many times as necessary to go to SETTINGS.

3. Press OK to select SETTINGS.

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4. Press ◄ or ► as many times as necessary to go to KEYBOARD BEEP.

5. Press OK to select KEYBOARD BEEP.
6. Press OK to validate the change or ◄◄ to exit without change.

   In the following example, press OK to deactivate the keyboard beep.

7. The change is taken into account.
8. The last selected main display appears.

4.1.6 Warning Beep

To activate or deactivate the warning beep, proceed as follows:

1. In the first level of menus, press OK to go to the second level.

2. Press ◄ or ► as many times as necessary to go to SETTINGS.

3. Press OK to select SETTINGS.
4. Press ◄ or ► as many times as necessary to go to ALARM BEEP.

5. Press OK to select ALARM BEEP.
6. Press OK to validate the change or ◄◄ to exit without change.
   In the following example, press OK to deactivate the warning beep.

7. The change is taken into account.
8. The last selected main display appears.

4.1.7 Speed Unit

To modify SmarTach® speed unit, proceed as follows:

1. In the first level of menus, press OK to go to the second level.

2. Press ◄ or ► as many times as necessary to go to SETTINGS.

3. Press OK to select SETTINGS.
4. Press ◄ or ► as many times as necessary to go to km/h / mph setting.

5. Press OK to select and change the display of instantaneous speed or ◄◄ to exit without change:
   - km/h (kilometres per hour)
   - mph (miles per hour)

   Even if mph is chosen, all other tickets and data will remain in km/h or km.
   In the following example, press OK to display instantaneous speed in mph:

6. Speed unit change is taken into account.
7. The last selected main display appears.

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4.1.8 Default Activity

The following section describes a function only available to companies.

Your company card must be inserted.

Companies can set driver and co-driver activities automatically selected by default by SmarTach® when ignition is turned on or off. The following choices are possible:

Vehicle status	Driver and co-driver activity automatically selected	Pictogram
Ignition is turned on	Keep the current selected activity	—
	Work	⚒
	Break/Rest	⌙
	Availability	⧄

Table 19

Vehicle status	Driver and co-driver activity automatically selected	Pictogram
Ignition is turned off	Keep the current selected activity	—
	Work	⚒
	Break/Rest	⌙
	Availability	⧄

Table 19 (continued)

To set the driver and co-driver default activity, proceed as follows:

1. In the first level of menus, press OK to go to the second level.

2. Press ◄ or ► as many times as necessary to go to COMPANY.

3. Press OK to select COMPANY.

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4. Press OK to select DFLT ACTIVITY.

5. Press ◄ or ► as many times as necessary to select the default activity:
   - when ignition is turned on.

   - when ignition is turned off.

6. Press OK to validate the selected option.
7. Press ◄ or ► as many times as necessary to select the driver default activity: ⌂, ⊠, _ or ⚒.
8. Press OK to validate or ◄◄ to exit without change.
9. Press ◄ or ► as many times as necessary to select the co-driver default activity: ⌂, ⊠, _ or ⚒.

Select a _ instead of an activity to keep the selected activity unchanged when ignition is turned on or off.

10. Press OK to validate or ◄◄ to modify the driver default activity.
11. The last selected main display appears.

4.1.9 Remind Beep

The following section describes a function only available to companies.

Your company card must be inserted.

SmarTach® can remind you to select activities when ignition is switched on or off by generating beeps.
Companies can set this function. Proceed as follows:

1. In the first level of menus, press OK to go to the second level.

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2. Press ◄ or ► as many times as necessary to go to COMPANY.

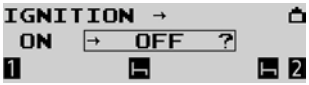
3. Press OK to select COMPANY.
4. Press ◄ or ► as many times as necessary to select REMIND BEEP.

5. Press OK to select REMIND BEEP:
6. Press ◄ or ► as many times as necessary to select REMIND BEEP condition:
   - when ignition is turned on.

   - when ignition is turned off.

7. Press OK to validate the selected condition.
8. Press OK to validate the change or ◄◄ to exit without change.

In the following example, press OK to choose REMIND BEEP when ignition is turned off.



9. The change is taken into account.
10. The last selected main screen appears.

4.2 How to Reset the Tripmeter

You may reset the vehicle tripmeter, unless the workshop has deactivated this function.

To reset the tripmeter, proceed as follows:

1. The vehicle tripmeter can be displayed when:
   - you press ◄ or ► as many times as necessary in the first level of menus to select the adequate display.

2. Press ◄◄ to reset the tripmeter.

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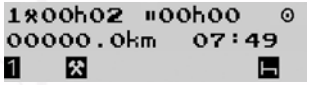
The tripmeter is displayed. SmarTach® prompts you to confirm the reset.

This display only appears if the workshop has activated this function.

3. Press OK to confirm tripmeter reset or ◄◄ to exit without change.
4. SmarTach® resets the tripmeter.



4.3 How to Get Paper Printouts

- The vehicle must be stationary.
- The ignition switch must be turned on (the engine does not need to be started).
- No downloading operation must be in progress.

The following table describes the different types of tickets (printouts) you can print, as defined in Annex 1B.

Pictogram	To print	From
24h	Driver and co-driver daily activities	Driver's or co-driver's cards
24h	Driver and co-driver daily activities	SmarTach®
!x	Events and faults	Driver's or co-driver's cards
!x	Events and faults	SmarTach®
T	Technical data	SmarTach®
>>	Over-speeding	SmarTach®

Table 20

Tickets can be printed using UTC time or local time.

UTC time is required for tickets that can be provided to authorities for control.

Refer to **Section 4.1.1 Printouts Time Reference**.

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Special contents on the ticket provide important information as indicated in the following table:

Location	Contents	Description
Beginning	▼ 16/04/2003 07:55 (UTC) _____▼_____ ...	The ticket has been printed with UTC time as required in Annex 1B.
Beginning	▼ 16/04/2003 08:55 (LOC) _____ACTIA▼_____ ** OUT OF REGULATION ** _____ACTIA▼_____	The ticket has not been printed with UTC time. It cannot be provided to authorities for control.
End	... _____▼_____	The ticket has been printed properly and fully.
End	... _____!x▼_____	Data that should have been printed are not on the ticket due to a fault.
Right Side	... ...	Red line: The paper roll is nearly finished.

Table 21

During the printing process, if the paper roll has not been fitted properly, or if the printer door has not been correctly closed, a message appears: CHECK PRINTER DOOR OR PAPER.
For dangerous goods vehicles, the user must ensure that no printout has been made 2 minutes before manipulating the dangerous goods.

For more details concerning printer use, please refer to sections:
6.3.2 About SmarTach® Printer,
6.4.1 How to Change the Paper Roll,
6.4.2 How to Clean the Printer Head.
Refer to **Section 5 SmarTach® for Dangerous Goods Vehicles**.

4.3.1 Driver and Co-Driver Activities

To print driver and co-driver daily activities, proceed as follows:

1. In the first level of menus, press OK to go to the second level.

2. Press ◄ or ► as many times as necessary to go to PRINT REPORT.

3. Press OK to select PRINT REPORT.
4. You can print your daily activities from SmarTach® or your driver card.

   In both cases, press ◄ or ► as many times as necessary to select 24h 🚌🚚 or 24h 🚚 respectively.

5. Press OK to continue or ◄◄ to cancel your selection

> Printing data from a driver card is only possible if the card is inserted.

6. If two cards have been inserted, press ◄ or ► to select from which card data are to be printed:

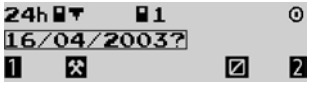
Card	Pictogram
Slot 1: Driver card	🚚1?
Slot 2: Co-driver card	🚚2?

Table 22

7. Press OK to validate or ◄◄ to change your selection.
8. Press ◄ or ► to modify the daily work period to be taken into account on the printout.

> Operate the same way to print activities from SmarTach® 24h 🚌🚚.

The following example is for printing your daily activities from your driver card.



9. Press OK to print the ticket or ◄◄ to change your selection.

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10. During the printing operation, the following display appears:

Press ◄◄ to stop printing.

11. Once the printing operation has finished, the following display appears:

Refer to explanation of this kind of ticket **Section 6.11 Example**.

4.3.2 Events and Faults

To print events and faults, proceed as follows:

1. In the first level of menus, press OK to go to the second level.

2. Press ◄ or ► as many times as necessary to go to PRINT REPORT.

3. Press OK to select PRINT REPORT.

4. You can print events and faults from SmarTach® or your driver card. In both cases, press ◄ or ► as many times as necessary to select ! × or ! × respectively.

5. Press OK.

Printing events from a driver card is only possible if the card is inserted.

6. If two cards have been inserted, press ◄ or ► to select from which card data are to be printed:

Card	Pictogram
Slot 1: Driver card	1?
Slot 2: Co-driver card	2?

Table 23

7. Press OK to validate and print the ticket or ◄◄ to change your selection.

> Operate the same way to print events from SmarTach® ! ×.

8. During the printing operation, the following display appears:

> Press ◄◄ to stop printing.

9. Once the printing operation has finished, the following display appears:

4.3.3 Technical Data and Over-speeding

To print technical data and over-speeding, proceed as follows:

1. In the first level of menus, press OK to go to the second level.

2. Press ◄ or ► as many times as necessary to go to PRINT REPORT.

3. Press OK to select PRINT REPORT.
4. To print technical data, press ◄ or ► as many times as necessary to select .

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5. To print driver over-speedings, press ◄ or ► as many times as necessary to select >> ▼.

6. Press OK to validate and print the ticket or ◄◄ to change your selection.
7. During the printing operation, the following display appears:

Press ◄◄ to stop printing.

8. Once the printing operation has finished, the following display appears:

4.4 How to Display Printouts

You can see your printouts on the display instead of having them on tickets.

To display printouts, proceed as follows:

1. In the first level of menus, press OK to go to the second level.

2. Press ◄ or ► as many times as necessary to go to DISPLAY REPORT.

3. Press OK to select DISPLAY REPORT.
4. Press ◄ or ► to select the relevant type of printout.
5. Follow the appropriate procedure.
6. Press ◄ or ► to scroll through the different displays.

Refer to Sections:
4.3.1 Driver and Co-Driver Activities,
4.3.2 Events and Faults,
4.3.3. Technical Data and Over-speeding.

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4.5 How to Declare Specific Conditions

The vehicle must be stationary.

4.5.1 Out of Scope

You can open an Out of Scope condition when your activities as driver are not covered by EEC Regulation No. 3820/85. You must close it when this regulation applies again.

Events and faults are managed as if this condition were not open, except for events related to driving.

To declare Out of Scope condition, proceed as follows:

1. In the first level of menus, press OK to go to the second level.

2. Press ◄ or ► as many times as necessary to go to SPECIFIC CONDIT.

3. Press OK to select SPECIFIC CONDIT.

4. Press ◄ or ► as many times as necessary to select OUT.

5. Press OK to declare Out of Scope condition.

6. Press ◄ or ► as many times as necessary to change the main display you want to display by default.

   Only the three following main displays are available when this condition is open:

   - Tripmeter:

   - Total mileage:

   - Vehicle speed:

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When this condition is open:
the second level of menus is not available,
insertion or withdrawal of any card closes it.

7. Press OK to close the condition.
SmarTach® shows you the date and time at which the Out of Scope condition was opened.

8. Press OK to confirm closing or ◄◄ to stay in Out of Scope condition.

4.5.2 Ferry/Train

During a journey, when your vehicle is transported by ferry or by train, you must declare a Ferry/Train condition.

To declare Ferry/Train condition, proceed as follows:

1. In the first level of menus, press OK to go to the second level.

2. Press ◄ or ► as many times as necessary to go to SPECIFIC CONDIT.

3. Press OK to select SPECIFIC CONDIT.
4. Press ◄ or ► as many times as necessary to select ☃?.

5. Press OK to declare the Ferry/Train condition.
SmarTach® shows you the date and time at which the Ferry/Train condition was declared.

6. Press OK to confirm the Ferry/Train condition declared or ◄◄ to cancel.

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4.6 How to Enter Locations Where Daily Work Periods Begin/End

You must specify the location where your daily work period begins/ends in the two following cases:

- when you insert or withdraw your driver card,

Refer to Sections:
3.4. How to Insert your Smart Card,
3.8. How to Withdraw your Smart Card.

- when you are starting or ending a daily work period while your card is inserted in SmarTach®. In this case, proceed as described in this section.

4.6.1 Begin

To enter the location where your daily work period begins, proceed as follows:

1. In the first level of menus, press OK to go to the second level.

2. Press ◄ or ► as many times as necessary to go to ENTER LOCATION.

3. Press OK to select ENTER LOCATION.
4. Press ◄ or ► as many times as necessary to select the relevant choice according to the following table

Pictogram	User	Location for
1 : ?|	Driver	Beginning of the daily work period
2 : ?|	Co-driver	Beginning of the daily work period

Table 24

5. Press OK to validate or ◄◄ to exit without change.
6. SmarTach® prompts you to specify the location where the daily work period starts.

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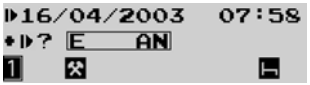
7. Press ◄ or ► as many times as necessary to select the relevant country, then press OK.

> Refer to **Section 6.8 List of Countries and Regions**.

> **For Spain, you have to specify the region: Select E for Spain.**
>
> 
>
>
> **Press ◄ or ► as many times as necessary to go to the relevant region.**
>
> **Press OK to validate the region.**
>
>
>

8. Press OK to confirm or ◄ to cancel.

9. The last selected main display appears.

4.6.2 End

To enter the location where your daily work period ends, proceed as follows:

1. In the first level of menus, press OK to go to the second level.

2. Press ◄ or ► as many times as necessary to go to ENTER LOCATION.

3. Press OK to select ENTER LOCATION.
4. Press ◄ or ► as many times as necessary to select the relevant choice according to the following table:

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Pictogram	User	Location for
1 : ⏯ ✦ ?	Driver	End of the daily work period
2 : ⏯ ✦ ?	Co-driver	End of the daily work period

Table 25

5. Press OK to validate.
6. SmarTach® prompts you to specify the location where the daily work period ends.

7. Press ◄ or ► as many times as necessary to select the relevant country, then press OK.

Refer to **Section 6.8 List of Countries and Regions.**

For Spain, you have to specify the region:
Select E for Spain.

Press ◄ or ► as many times as necessary to select the relevant region.

Press OK to validate the region.

8. Press OK to confirm or ◄ to cancel.

9. The last selected main display appears.

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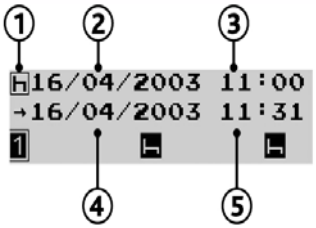
4.7 How to Enter Activities Manually

- The vehicle must be stationary.
- The ignition switch must be turned on (the engine does not need to be started).
- No downloading operation must be in progress.
- No printing operation must be in progress.

All times used in this section are in local time.

You can enter activities manually if you have performed activities while away from your vehicle, your driver card not having been inserted in SmarTach®. You were not able to declare them in real time.
SmarTach® enables you to enter them at the card insertion just following those activities.

For each activity, you will have to declare the following data:



Activity entry display

Number	Data
1	Activity type (Work, Availability or Break/Rest)
2	Start date of this activity
3	Start time of this activity
4	End date of this activity
5	End time of this activity

Table 26

SmarTach® only allows you to manually enter activities having occured between the last withdrawal of your driver card and its insertion.

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The data you enter manually will be stored on your driver card only and not in SmarTach®.

Once you have started manual entry of activities, SmarTach® warns you if you do not enter any data during a certain time, as shown in the following table.

No action for	Result
30 seconds	The warning light flashes and several beeps sound until you press a key.
60 seconds	The manual entry is interrupted and only the data entered and validated by pressing OK are saved. **The data shown on the display at the moment of the interruption are not stored.**

Table 27

The examples detailed in the following sections (4.7.1 to 4.7.3) explain how you can enter activities manually, in three different cases:

- You want to enter activities having occurred during the current daily work period.

Refer to **Section 4.7.1 During the Current Daily Work Period**.

- You want to enter activities having occurred at the end of the previous daily work period.

Refer to **Section 4.7.2 At the End of the Previous Daily Work Period**.

- You want to enter activities having occurred at the beginning of the current daily work period.

Refer to **Section 4.7.3 At the Beginning of the Current Daily Work Period**.

By combining the examples of sections 4.7.2 and 4.7.3, you will be able to enter both activities having occurred at the end of the previous daily work period and at the beginning of the current daily work period.

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4.7.1 During the Current Daily Work Period

In this example, assume that:

Action	Date	Time
You started your daily work period.	April 16th, 2003	9:00
You withdrew your driver card from SmarTach®.	April 16th, 2003	11:00
Now, you are inserting your driver card in another SmarTach®, in another vehicle.	April 16th, 2003	11:32

Table 28

You want to enter your activities from 11:00 to 11:31:

Activity	Duration
Availability	From 11:00 to 11:10
Work	From 11:10 to 11:31

Table 29

Here are the steps to follow:

1. Hold down or to open the flap before inserting your smart card.
2. When the slot is ready for card insertion, the corresponding pictogramm 1 or 2 flashes.
3. Insert your card, with the chip facing up and the arrow towards SmarTach®, into the appropriate slot:
   - left slot: driver
   - right slot: co-driver.

4. Slide it in gently up to the stop.

Do not force. Let the mechanism draw in the card.

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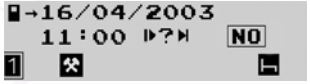
5. The slot closes automatically.

The following display appears to inform you that SmarTach® reads the card. During operation, symbols move / - \.

6. After a moment, your name appears.

7. SmarTach® displays the date and time of the last card withdrawal and asks you if it is still the same daily work period.



8. Confirm that it is the case, press ◄ or ► to select YES.

Press OK to validate or ◄◄ to exit.

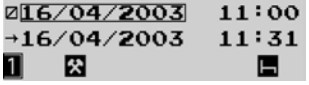
9. The activity entry display appears.

The start date/time displayed is the same as the date/time your driver card was withdrawn.
The end date/time displayed is one minute before the date/time your driver card was inserted.

To enter an availability period from 11:00 to 11:10, press ◄ or ► as many times as necessary to select AVAILABILITY ⧄.

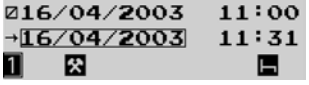
Press OK to validate.

10. To confirm the start date, press OK.



11. To confirm the start time, press OK.

12. To confirm the end date, press OK.



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13. To select the correct end time, press ◄ as many times as necessary.

14. To confirm the end time press OK.

15. The activity entry display appears again, showing the remaining period for which you can enter activites.

To enter a work period from 11:11 to 11:31, press ◄ or ► as many times as necessary to select WORK ⚒.

Press OK to validate.

16. To confirm the start date, press OK.

17. To confirm the start time, press OK.

18. To confirm the end date, press OK.

19. To confirm the end time, press OK.

20. The end time corresponds to the minute before you inserted your card. SmarTach® prompts you to confirm all data entered.

Press OK to confirm all data entered.

Press ◄◄ to cancel.
In this case, you have to enter your activities again.

21. The entered activities are confirmed. They are stored in your driver card.

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4.7.2 At the End of the Previous Daily Work Period

In this example, assume that:

Action	Date	Time
You are starting your daily work period.	April 16th, 2003	8:59
Now, you are inserting your driver card in SmarTach®.	April 16th, 2003	8:59
Yesterday, you withdrew your card.	April 15th, 2003	19:16
Yesterday, after having withdrawn your card, you worked.	April 15th, 2003	from 19:16 to 19:45

Table 30

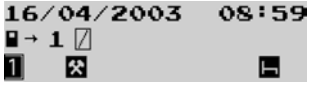
Here are the steps to follow:

1. Hold down 1 or 2 to open the flap before inserting your smart card.
2. When the slot is ready for card insertion, the corresponding pictogramm 1 or 2 flashes.
3. Insert your card, with the chip facing up and the arrow towards SmarTach®, into the appropriate slot:
   - left slot: driver
   - right slot: co-driver.

4. Slide it in gently up to the stop.

> **Do not force. Let the mechanism draw in the card.**

5. The slot closes automatically.
   The following display appears to inform you that SmarTach® reads the card. During operation, symbols move / - \.



6. After a moment, your name appears.

7. SmarTach® displays the date and time of the last card withdrawal and asks you if it is still the same daily work period.

Press OK to validate or ◄◄ to exit.

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8. SmarTach® displays the end date and time of the last activity stored in your card and asks you if it corresponds to the end of the previous daily work period.

Press ◄ or ► to select NO.

Then, press OK to confirm that you have performed other activities after that time.

9. The activity entry display appears showing the period for which you can enter activites.

You want to enter a work period from 19:16 to 19:45.

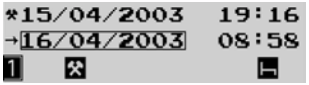
To do so, press ◄ or ► as many times as necessary to select WORK .

Press OK.

10. To confirm the start date, press OK.

11. To confirm the start time, press OK.

12. SmarTach® asks you to define the end date.



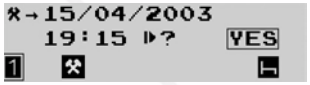
In this case, to select the end date, press ◄ and then press OK.

13. SmarTach® asks you to define the end time.

In this case, to select the end time, press ◄ as many times as necessary, and then press OK .

Hold down ◄ or ► to select time more rapidly.

14. SmarTach® displays the end date and time of the last activity stored in your card and asks you if it corresponds to the end of your previous daily work period.



To confirm that it corresponds to the end of your previous daily work period, press OK.

15. SmarTach® displays the date and time when your previous daily work period ended, and asks you to enter the corresponding location.

> You will have to specify this location only if it was not entered when your driver card was last withdrawn.

Choose the current location using ◄ or ► and OK or use ◄◄ to exit this question.

> Refer to **Section 6.8 List of Countries and Regions**.

16. SmarTach® prompts you to enter the date on which you are starting your current daily work period.

Press ► to select the correct date, and press OK.

17. SmarTach® prompts you to enter the time at which you are starting your current daily work period.

Press ► as many times as necessary to select the correct time, and press OK.

18. SmarTach® displays the date and time when your current daily work period started, and asks you to enter the corresponding location.

Choose the current location using ◄ or ► and OK or use ◄◄ to exit this question.

> Refer to **Section 6.8 List of Countries and Regions**.

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19. Once the corresponding location is entered and confirmed, SmarTach® prompts you to confirm all data entered.

Press OK to confirm all data entered.

> Press ◄◄ to cancel.
> In this case, you have to enter your activities again.

20. The entered activities are confirmed. They are stored in your driver card.

4.7.3 At the Beginning of the Current Daily Work Period

In this example, assume that:

Action	Date	Time
Now, you are inserting your driver card in SmarTach®.	April 16th, 2003	8:58
You actually started your daily work period the same day.	April 16th, 2003	from 7:00 to 8:58
Yesterday, you withdrew your card from a SmarTach®	April 15th, 2003	19:13

Table 31

You want to enter a work period from 7:00 to 8:57.

Here are the steps to follow.

1. Hold down ◄ or ► to open the flap before inserting your smart card.

2. When the slot is ready for card insertion, the corresponding pictogramm 1 or 2 flashes.

3. Insert your card, with the chip facing up and the arrow towards SmarTach®, into the appropriate slot:
- left slot: driver
- right slot: co-driver

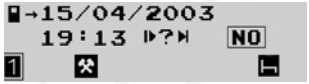
4. Slide it in gently up to the stop.

> **Do not force. Let the mechanism draw in the card.**

5. The slot closes automatically.

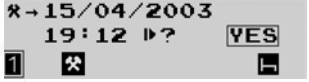
6. After a moment, your name appears.

7. SmarTach® displays the date and time of the last card withdrawal and asks you if it is still the same daily work period.



Press OK to indicate that the work period has changed or ◄◄ to exit.

8. SmarTach® displays the end date and time of the last activity stored in your card and asks you if it corresponds to the end of the previous daily work period.



Press OK to select YES.

9. SmarTach® displays the date and time when your previous daily work period ended, and asks you to enter the corresponding location.

You will only have to specify this location if it was not entered when your driver card was last withdrawn.

Choose the current location using ◄ ► and OK or use ◄◄ to exit this question.

Refer to **Section 6.8 List of Countries and Regions**.

10. SmarTach® prompts you to enter the date on which you are starting your current daily work period.

Press ► to select the correct date and press OK.

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11. SmarTach® prompts you to enter the time at which you are starting your current daily work period.

Press ▶ as many times as necessary to select the correct time and then press OK.

12. SmarTach® displays the date and time when your current daily work period started and asks you to enter the corresponding location.

Choose the current location using ◀ ▶ and OK or use ◀◀ to exit this question.

> Refer to **Section 6.8 List of Countries and Regions**.

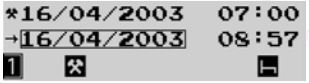
13. The activity entry display appears showing the period for which you can enter activities. Press OK to validate.

You want to enter a work period from 7:00 to 8:57. To do so press ◀ or ▶ as many times as necessary to select WORK. Press OK to validate.

14. To confirm the start date, press OK.

15. To confirm the start time, press OK.

16. To confirm the end date, press OK.



17. To select the end time, press OK.

The end time corresponds to the minute before you inserted your card.

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18. SmarTach® prompts you to confirm all data entered.

Press OK to confirm all data entered

Press ◄◄ to cancel.
In this case, you have to enter your activities again.

19. The entered activities are confirmed. They are stored in your driver card.

4.8 How to Manage Company Locks

Company locks allow the confidentiality of data belonging to a company to be protected.

Companies are highly recommended to lock their data systematically before SmarTach® is used by any driver from the company.

Any company lock consists of two markers, as explained in the following table:

Marker	Description
Lock start marker	From this moment, all data recorded in SmarTach® are locked by the company (as identified by its company card number). Data locked by a company are not available to any other company: they cannot be downloaded, printed out or displayed.
Lock end marker	From this moment, all data recorded in SmarTach® are no longer locked by a company.

Table 32

A company can lock its data when:

- no lock has been applied,

Refer to **Section 4.8.1 How to Place a Lock when no Lock has been Placed**.

- a lock has already been applied.

Refer to **Section 4.8.2 How to Place a Lock when a Lock has already been Placed**.

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4.8.1 How to Place a Lock when no Lock has been Placed

- The vehicle must be stationary.
- A company card must be inserted.

To place a company lock, proceed as follows:

1. In the first level of menus, press OK to go to the second level.

2. Press ◄ or ► as many times as necessary to go to COMPANY LOCK.

3. Press OK to select COMPANY LOCK.

4. SmarTach® prompts you to place the company lock.

If a date appears, it means that a lock has already been started.

Refer to **Section 4.8.2 How to Place a Lock when a Lock has already been Placed**.

5. Press OK to confirm or ◄ to exit without a change.
6. SmarTach® places a marker for the start of the lock, and displays for a moment the date and time at which the lock start marker was placed.

7. The last selected main display appears.

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4.8.2 How to Place a Lock when a Lock has already been Placed

- The vehicle must be stationary.
- A company card must be inserted.

To place a company lock, proceed as follows:

1. In the first level of menus, press OK to go to the second level.

2. Press ◄ or ► as many times as necessary to go to COMPANY LOCK.

3. Press OK to select COMPANY LOCK.
4. SmarTach® notifies you that a lock has already been placed.

The displayed date corresponds to the date at which the marker for the start of the existing lock was placed.

5. Press OK to place the company lock or ◄◄ to exit without a change.
6. The following table describes the two possible cases:
   - the active lock has been placed by your company,
   - the active lock has been placed by another company.

By your company	By another company
No new lock will be generated. The lock start marker remains active. The date and time at which the lock start marker was placed is displayed for a few seconds.	SmarTach® places a marker for the end of the lock for this company. SmarTach® places a marker for the start of the lock for your company. The date and time at which the new lock start marker was placed is displayed for a few seconds.

Table 33

7. The last selected main display appears.

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4.8.3 How to End a Lock

- The vehicle must be stationary.
- A card belonging to the same company than the one having placed the current lock may be inserted.

To end the lock of your company data, proceed as follows:

1. In the first level of menus, press OK to go to the second level.

2. Press ◄ or ► as many times as necessary to go to COMPANY LOCK.

3. Press OK to select COMPANY LOCK.
4. SmarTach® notifies you that a lock has already been placed.

The displayed date corresponds to the date at which the marker for the start of the lock was placed.

5. Press ◄ or ► as many times as necessary to go to →🔒🔒?.

6. Press OK to end the lock or ◄◄ to exit without a change.
7. SmarTach® places a marker for the end of the current lock.

The date and time at which the lock end marker was placed is displayed for a few seconds.

8. The last selected main display appears.

4.9 How Companies can Download Data

- The vehicle must be stationary.
- No printing operation must be in progress.
- A company card must be inserted.

1. Connect to the SmarTach® front panel a tester or any other device allowing data to be downloaded and stored on computer storage media.

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2. Select the relevant data on the tester and download them.
3. Close the downloading session.

Refer to Annex 1B, Appendix 7 for more details on downloading data (from SmarTach® or a driver card).

Downloaded data are signed to certify data integrity and authenticity.

Downloading does not alter or delete any stored data.

4.10 How to Display SmarTach® Technical Data

To display SmarTach® technical data, proceed as follows:

1. In the first level of menus, press OK to go to the second level.

2. Press ◄ or ► as many times as necessary to go to INFORMATION.

3. Press OK to select INFORMATION.
4. The following data are available (examples):
   - Product general identification

   - Version details for Hardware and Software
   - Date on which SmarTach® must be calibrated.

   - Constant of the recording equipment (K)

   - Effective circumference of the wheel tyres (L)

   - Characteristic coefficient of the vehicle (W)

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5. SmarTach® for Dangerous Goods Vehicles

5.1 Introduction

ACTIA developed specific versions of SmarTach® to be installed in dangerous goods vehicles. These SmarTach® undergo a standard EC inspection to ensure that they function properly during the transport and handling of dangerous goods in explosive atmospheres.
This EC inspection certifies them as per directive ATEX 94/9/EC. A simple means of checking compliance with this requirement is to ensure that the Ex logo is present:

- On the front of the product,
- On the identification label or on the body of the product.

In addition, the whole vehicle is required to undergo an identical inspection for which it must:

- Use an EC conforming tachograph for dangerous goods vehicles,
- Use a speed sensor, also EC conforming, that is compatible with the tachograph,
- Comply with the vehicle wiring rules (IEC standard 60079 – 14) for proper installation and use of these products.

Here are two examples of identification markings for these EC approved products as per directive ATEX 94/9/EC:

- On the tachograph
  INERIS 05 ATEX 0000 Ex II 3(2) G EEx nA [ib] IIC T6 CE0080
- On the speed sensor connected to the tachograph
  INERIS 05 ATEX 0000 Ex II 2 G EEx ib IIC T4 CE0080

More detailed technical information for installers is delivered with each device in the form of a declaration of EC conformity and instruction manual.

This specific installation must undergo regular checks at an approved tachograph centre.
The tachograph and sensor cannot be repaired by these centres.

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5.2 Instructions for Use in the Presence of an Explosive Atmosphere

Before SmarTach® and sensor may be exposed to an explosive atmosphere, you must also comply with the following rules of use relating to SmarTach® and to the vehicle power:

1. Ensure that all operations involving the printer and the smart card readers are complete. Specifically, ensure that the reader slots 1 and 2 are closed, and that at least 2 minutes have passed since the last printout.
2. Turn the ignition switch off; SmarTach® goes into standby mode while verifying whether card and printer operations are indeed complete. A specific screen is displayed according to the case.

- If a reader slot is open, the following screen appears.

  Turn the ignition switch on and carry out the necessary action to close the reader slots.

- If a printout was just completed, the following screen appears.

  Wait until the required time lapse has passed.

- When everything is normal, the following screen appears.

  All conditions have been satisfied and you may proceed to the following steps.

3. Turn off the battery master switch to shut-off power to nearly all the vehicle systems. SmarTach® maintains all its regulatory monitoring functions, but it is not able to perform its power functions, nor those relating to the driving of the vehicle.

The three actions cited above must be carried out in the given order.

In particular, the battery master switch must never be open before the ignition switch has been turned off.

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When SmarTach® and sensor are or may be exposed to an explosive atmosphere, compliance with the following instructions is also required:

- Close vehicle doors and windows.
- Ensure that the ambient temperature around SmarTach® does not exceed 50°C (maximum temperature for use in hazardous areas) for at least 20 minutes, and that the ambient temperature around the sensor does not exceed 120°C, for at least 5 minutes.
- Use SmarTach® **only** to change activities, consult the main menu screens or acknowledge warnings. As the screen back lighting is off, screen legibility is not optimal.
- Never open the front connector cover, which acts as a protection for the calibration/downloading connector.
- If the front connector cover is damaged, have it repaired by an approved ACTIA network workshop.
- During this operating phase, never connect SmarTach® to download data or for a calibration to the front connector.

When SmarTach® and its sensor are no longer exposed to an explosive atmosphere:

1. Return the battery master switch to its normal position,
2. Turn on the ignition switch to resume use if necessary.

The two actions cited above must be carried out in the given order.

In particular, the ignition switch must not be turned on while the battery master switch is open.

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6. Appendices

6.1 SmarTach® Functions

The following lists give an overview of the main functions performed by SmarTach®.

All functions shown in italics relate to system security.

6.1.1 General Purpose Functions

- ***Function access control****: controls access to all SmarTach® functions and to recorded data, according to the type of smart cards inserted. Each user only has access to the functions and data which concern him. In normal use by drivers, SmarTach® is in operational mode.*
- ***Driver activity and driving status monitoring (one driver, one co-driver)****: determines the activity under way for each driver (Driving, Work, Availability, Break/Rest) and the driving status (Single, Crew), according to movements of the vehicle and activation of SmarTach®'s keys.*
- ***Driver manual entries****: allows drivers to manually enter their activities for the period between the last withdrawal of their card and its current insertion, to declare the locations for the beginning and end of their daily work periods, and to enter special conditions for application of EEC Regulation No. 3820/85 (out of scope, ferry/train).*
- ***Vehicle movement management****:*
  - *measures the speed of the vehicle and the distance travelled, from a signal provided by the speed sensor.*
  - *executes pairing with the speed sensor connected, allowing that sensor to be identified and authenticated. Pairing, which is needed for each calibration of SmarTach®, initialises a secure data link between SmarTach® and the speed sensor.*
  - *monitors integrity of links and continuity of exchanges with the speed sensor, ensures its identification and regular authentication thanks to the secure data link established on pairing.*
- ***Time management****: constantly measures UTC date and time,* manages local time *and checks time adjustment for SmarTach®.*
- ***Card insertion and withdrawal monitoring****:*
  - *monitors insertions and withdrawals of cards, authenticates cards and identifies users,*
  - *protects exchanges of data between SmarTach® and the smart cards, guaranteeing integrity of data exchanged.*
- ***Recording and storing of data in SmarTach®'s memory****: guarantees read, update, storage and erasure of data representing on average one year's activity of the vehicle.*
- ***Recording and storing of data on the smart cards****: guarantees read, update, storage and erasure of data on the smart cards inserted. For a driver card, such data represents on average 28 days' activity for that driver.*

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- ***Detection of events and/or faults****: gives information about events and faults detected.*
- ***Built-in tests****: monitors proper operation of SmarTach® by performing self or built-in tests.*
- **Power *supply management****: monitors the external electrical power supply,* generates power supply for the internal parts and the speed sensor, optimises consumption, *ensures reliable operation when the external power supply goes outside the normal range for use.*

In normal use, SmarTach® must not be disconnected from the battery of the vehicle.

- ***Displaying****: shows data to users, allows for interactive dialogue via menus.*
- ***Printing****: allows tickets to be printed from data recorded in SmarTach®'s memory and on the inserted smart cards. You can also see the content of printouts on the display.*
- **Warnings**: generates warnings related to respect for ECC Regulation No. 3820/85, to any event or fault, and to correct management of work times and use of the device. Warning causes are displayed on screen. The user must acknowledge warnings. Warnings activate the warning light on the front panel, and, in certain conditions, a beep.
- *As the SmarTach® housing may not be opened by unauthorised persons, a **seal** and **tamper-protection labels** are used to detect whether it has been opened or not.*

Labels and seals must not be destroyed or corrupted; they are checked during each periodic inspection.

- **Data communication**: manages the exchange of data with other vehicle calculators, using connectors on the rear panel.
- ***Calibration****: allows a certified workshop to adapt the constant of the recording equipment (k) to the characteristic coefficient of the vehicle (w), to trigger pairing with its speed sensor, and to adjust the current time.*
- **Diagnostic and parameter settings**: allows a workshop to conduct diagnostic operations, to start up tests and to write and read parameters thanks to a tester connected by the front panel or the rear panel.

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6.1.2 Functions Accessible in the Company Mode only

- **Company lock management**: allows companies to prohibit other companies from downloading data concerning them.
- ***Data downloading to external media****: allows a connected item of equipment to collect data recorded in SmarTach®'s memory or on an inserted smart card. A signature associated with the data collected means data integrity and authenticity can be checked later.*

6.2 General Instructions

6.2.1 Compliance with Regulations

The driver's responsibilities are defined by EEC Regulation No. 2135/98 and this paragraph summarises the provisions to be applied. In no event may it be considered to replace the said regulation which remains applicable in its entirety.

1. Each driver (and his employer) is required to make certain of the correct operation of SmarTach® and his smart card by carefully performing the operations required by applicable regulations.
2. He shall ensure that the printouts corresponding to his activity can be produced correctly in the event of an inspection (and thus, must have enough paper available).
3. Any driver subject to the provisions of EEC Regulation No. 3820/85 shall request his card from the competent authority of the Member State where he has his normal residence. For administrative purposes, the driver card may not be valid for more than 5 years maximum. It must not be obtained on the basis of false declarations and/or forged documents.
4. Each driver may hold one valid driver card only. He is authorised to use only his own personalised driver card. The driver shall not use a driver card which is defective or which has expired.
5. If the driver card is damaged, malfunctions or is lost or stollen, the driver shall apply within 7 calendar days for its replacement to the competent authorities of the Member State in which he has his normal residence. The authority will provide him with a replacement card within 5 working days after reception of a detailed request.
6. When a driver wishes to renew his driver card, he shall apply to the competent authority of the Member State in which he has his normal residence not later than 15 working days before the expiry date of the card.
7. The driver shall not use a dirty or damaged card. For this reason, the cards shall be adequately protected.

Refer to **Section 6.3 Precautions for Use**.

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8. Drivers shall use their driver card every day on which they are driving, starting from the moment they take over the vehicle. The driver card shall not be withdrawn before the end of the daily work period, unless its withdrawal is otherwise authorised.
9. Drivers must select the activity to be recorded by SmarTach® using keys 1 and 2, and this must correspond to their true activity.
10. The driver must manually enter into SmarTach® the symbol for the country in which he starts and the country in which he ends his daily work period (in both cases, the region must be added where Spain is concerned).
11. Whenever the driver drives a vehicle equipped with SmarTach®, he shall be able to produce his driver card in response to any request from an inspecting officer. Whenever he has driven a vehicle equipped with a paper disk tachograph, he shall also be able to produce the disks corresponding to the period of the current week and, in any event, the disk for the last day of the previous week.
12. In the case of a mixed fleet of vehicules equipped with digital and disc tachographs, the driver of a vehicle equipped with a disc tachograph must be able to produce his driver card, discs and print-outs for the current week as well as the disc and/or print-out for the last day of the previous week.
13. It shall be forbidden to falsify, suppress or destroy data stored in SmarTach® or on the driver card, or printouts to be produced to an inspecting officer.
14. It shall also be forbidden to manipulate SmarTach®, the speed sensor and their connections, as well as the driver cards in order to falsify, suppress or destroy data and/or printed information. The vehicle shall not be equipped with any device allowing such manipulations to be performed.
15. In the event of breakdown or faulty operation of SmarTach® or the speed sensor, drivers shall inform their employer who must have it repaired by a approved workshop as soon as circumstances permit. During this period of breakdown or faulty operation, if their activities are no longer recorded correctly, the drivers shall mark on a temporay sheet of paper to be attached to their driver card, data enabling them to be identified (driver card number and/or name and/or driving licence number), including their signature and all information for the various periods of time which are no longer recorded or printed out correctly by SmarTach®.
16. If the driver card is damaged or malfunctions, the driver shall return it to the competent authority of the Member State in which he has his normal residence. Theft of the driver card shall be the subject of a formal declaration to the competent authorities of the State where the theft occurred. Loss of the driver card shall be reported in a formal declaration to the competent authorities of the Member State that issued it and to the competent authorities of the Member State of normal residence where they are different.

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17. In the event of loss, theft, damage to or defective operation of his card, the driver shall, at the end of his journey, print out the information relating to the periods of time recorded by SmarTach® and mark on this document the details that enable him to be identified (driver card number and/or name and/or driving licence number), including his signature.
18. The driver may continue to drive without his driver card for a maximum period of 15 calendar days or for a longer period if this is necessary for the vehicle to return to its premises.

6.2.2 Conditions for Secure Use

SmarTach® can only be used reliably, that is in compliance with its security objectives, if the following conditions apply:

1. SmarTach® must not be unpowered.
2. The SmarTach® housing must not be opened by its users. For this reason, SmarTach® has 5 tamper-protection labels including 2 red ones on the sides of the front panel. It is strictly forbidden to remove these labels.
3. Drivers must make certain that SmarTach® internal UTC time corresponds to the real time.
4. Drivers must only use models of paper roll type approved for SmarTach®.
5. Drivers must not introduce cards other than their own into SmarTach®.
6. Each driver must only have one valid card at any given time.
7. Periodic inspections of SmarTachs® installed on vehicles must be made after each repair, after each change in characteristic coefficient of the vehicle, or in the effective circumference of the wheel tyres, when deviation of the UTC clock exceeds 20 minutes, or when the vehicle registration number has changed, and 2 years at the latest after the last inspection.
8. Drivers must use SmarTach® as provided for by the regulations and instructions explained in this manual, and behave responsibly.

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6.3 Precautions for Use

6.3.1 General

1. All actions on SmarTach® must be made when the vehicle is stationary (except for acknowledging warnings).
2. Do not let liquid or foreign objects get inside SmarTach®.
3. Clean the front panel using a soft cloth moistened with a cleaning product designed specially for cleaning plastics, or a soft damp cloth.
4. Apply the cleaning product to the cloth, not directly to the front panel.
5. Only insert tachograph cards. Any other object may damage the card slot.
6. If SmarTach® cannot read the card, clean the card using a soft cloth.

6.3.2 About SmarTach® Printer

- The printer head substrate surface is coated with glass, so mechanical stresses, shocks, dust and scratches should be avoided to prevent damage.
- Avoid condensation. If condensation occurs, do not use the printer until it has disappeared.
- If a sticking sound is heard during printing, check and adjust the paper feed mechanism with the printer's door.
- If paper residue becomes stuck to the printer head, print quality is degraded. If this occurs, clean the printer head with alcohol. Do not use sandpaper as this will destroy the heat elements.

Refer to **Section 6.4 SmarTach® Maintenance.**

- Remove regularly paper residue from the inside of the printer using a soft cloth.

6.4 SmarTach® Maintenance

6.4.1 How to Change the Paper Roll

Paper rolls must have been certified for use in SmarTach® by ACTIA.
Approval mark on ACTIA paper is proof of compliance.

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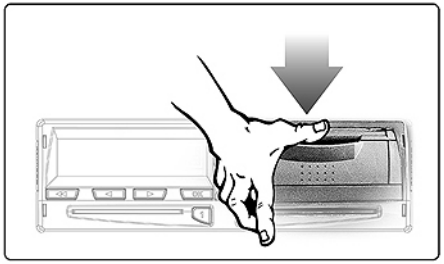
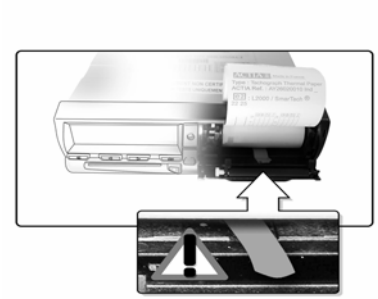
To change the paper roll, proceed as follows:

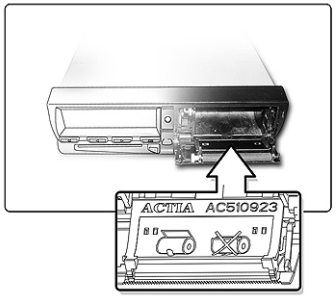
1. Pull the level towards the front and open the printer door.



2. Pull the plastic tab to remove the roll or empty drum.
Then unwind the new paper roll out through the top, towards you, with the blank side upwards.



3. Insert the roll in its recess, following the instructions provided on the back of the printer door.



The printer door is a spare part.
Use the reference provided on the door to order doors.

4. Press on the door to close it, holding the paper upwards.

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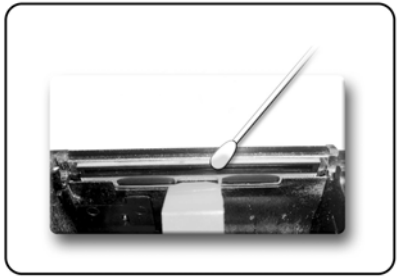
6.4.2 How to Clean the Printer Head

1. If you note any printing quality problem, clean the printer head with a cotton swab slightly moistened with alcohol.



2. Then, remove paper residue from the inside of the printer using a soft cloth.

6.5 SmarTach® Technical Data

SmarTach® is fully operational in the temperature range -20/+70°C.
SmarTach® is also compliant with all environmental constraints defined by Annex 1B.

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6.6 Stored Data

6.6.1 In SmarTach®

In addition to the identification data for SmarTach® and the connected speed sensor, SmarTach® records the data listed in the following table.

The storage capacity is on average one year unless otherwise stated. The most recent data replaces the oldest.

For further details on data recorded or on storage rules, refer to Annex 1B.

Data recorded	Recording conditions / Storage rules
Driver and workshop card insertion and withdrawal data	For each insertion / withdrawal cycle: • Card holder's surname and first name(s) as stored in the card • Card number, issuing Member State and expiry date as stored in the card • Insertion date and time • Vehicle odometer value at card insertion • Slot in which the card is inserted • Withdrawal date and time • Vehicle odometer value at card withdrawal • Information about the previous vehicle used by the driver, as stored in the card (vehicle registration number, registering Member State and card withdrawal date and time) • A flag indicating whether, at card insertion, the card holder has manually entered activities or not.
Driver activities	Whenever the driver has changed activity, and/or has changed driving status, and/or whenever a driver or workshop card has inserted or withdrawn: • Driving status (Single, Crew) • Slot (Driver, co-driver) • Card status (inserted, not inserted) • Activity (Driving, availability, work, break/rest) • Time of the change Activity data manually entered by a driver are not recorded in SmarTach®'s memory.

Table 34

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Data recorded	Recording conditions / Storage rules
Locations where daily work periods start and/ or end	Manual entry: • Where appropriate: card number, issuing Member State • Date and time of the entry • Type of entry (beginning, end) • Country and region entered • Vehicle odometer value
Odometer	Every calendar day at midnight (UTC): • Vehicle odometer value • Corresponding date
Detailed speed	Every second of at least the last 24 hours when the vehicle was moving: • Instantaneous speed of the vehicle • Corresponding date and time
Events: • Card conflict	On each event detection: • Date and time of beginning of event • Date and time of end of event • Card type, number and issuing Member State of the two cards creating the conflict **Storage rule**: The 10 most recent events

Table 34 (continued)

Data recorded	Recording conditions / Storage rules
Events: • Driving without an appropriate card	• Date and time of beginning of event • Date and time of end of event • Card type, number and issuing Member State of any card inserted at beginning and/or end of the event • Number of similar events for that day **Storage rule**: The longest event of each of the 10 last days of occurrence, and the 5 longest events over the last 365 days
Events: • Card insertion while driving	• Date and time of event • Card type, number and issuing Member State • Number of similar events for that day **Storage rule**: The last event for each of the 10 last days of occurrence
Events: • Last card session not correctly closed	• Date and time of card insertion • Card type, number and issuing Member State • Last session data as read from the card (date and time of card insertion, vehicle registration number and registering Member State) **Storage rule**: The 10 most recent events

Table 34 (continued)

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Data recorded	Recording conditions / Storage rules
Events: • Over-speeding	• Date and time of start of event • Date and time of end of event • Maximum speed measured during the event • Mean average of speed measured during the event • Number of similar events for the same day **Storage rule**: The most serious event for each of the 10 last days of occurrence, and the 5 most serious events over the last 365 days, the first event having occurred after the last calibration
Events: • Power supply interruption	• Date and time of beginning of event • Date and time of end of event • Card type, number and issuing Member State of any card inserted at beginning and/or end of the event • Number of similar events for that day **Storage rule**: The longest event for each of the 10 last days of occurrence, and the 5 longest events over the last 365 days

Table 34 (continued)

Data recorded	Recording conditions / Storage rules
Events: • Motion data error	• Date and time of beginning of event • Date and time of end of event • Card type, number and issuing Member State of any card inserted at beginning and/or end of the event • Number of similar events for that day **Storage rule**: The longest event for each of the 10 last days of occurrence, and the 5 longest events over the last 365 days
Events: • Security breach attempt	• Date and time of beginning of event • Date and time of end of event (if relevant) • Card type, number and issuing Member State of any card inserted at beginning and/or end of the event • Type of event **Storage rule**: The 10 most recent events per type of event
Faults: • Card fault	On each fault detection: • Date and time of beginning of fault • Date and time of end of fault • Card type, number and issuing Member State **Storage rule**: The 10 most recent driver card faults

Table 34 (continued)

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Data recorded	Recording conditions / Storage rules
Faults: • Recording equipment faults	• Date and time of beginning of fault • Date and time of end of fault • Card type, number and issuing Member State of any card inserted at beginning and/or end of the fault • Type of fault **Storage rule**: The 10 most recent faults for each type of fault, the first fault after the last calibration
Calibration	On activation or at each calibration: • Purpose of calibration: activation, first installation, installation, periodic inspection • Workshop name and address • Workshop card number, card issuing Member State and card expiry date • Vehicle identification • Parameters updated or confirmed: w (characteristic coefficient of the vehicle), k (constant of the recording equipment), l (effective circumference of the wheel tyres), tyre size, speed limiting device setting, odometer (old and new values), date and time (old and new values) **Storage rule**: Known calibration parameters at the moment of activation of SmarTach®, its very first calibration following its activation, its first calibration on the current vehicle and the 5 most recent calibrations.

Table 34 (continued)

Data recorded	Recording conditions / Storage rules
Time adjustment	On each time adjustment performed outside complete calibration: • Date and time (old value) • Date and time (new value) • Workshop name and address • Workshop card number, card issuing Member State and card expiry date **Storage rule**: The most recent time adjustment and the 5 largest time adjustments
Control activities	At each control carried out: • Date and time of control • Control card number and card issuing Member State • Type of the control (displaying and/or printing and/or SmarTach® downloading and/or card downloading) In case of downloading, the dates of the oldest and the most recent days downloaded shall also be recorded. **Storage rule**: The 20 most recent controls

Table 34 (continued)

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Data recorded	Recording conditions / Storage rules
Company locks	For each lock: • Lock start (lock-in) date and time • Lock end (lock-out) date and time • Company card number and card issuing Member State • Company name and address **Storage rule**: The 20 most recent locks
Download activities	For the last data memory downloading to external media while in company or calibration mode: • Date and time of downloading • Company or workshop card number and card issuing Member State • Company or workshop name
Specific conditions	At each entry: • Date and time of the entry • Type of specific condition (out of scope, ferry/ train)
Over-speeding controls performed	• Date and time of last over-speeding control • Date and time of first over-speeding following the last over-speeding control • Number of over-speeding events since the last over-speeding control

Table 34 (continued)

6.6.2 On Driver Card

SmarTach® records the data listed in the following table on inserted driver cards.

The storage capacity is on average 28 days unless otherwise stated. The most recent data replaces the oldest.

For further details on data recorded or on storage rules, refer to Annex 1B.

Data recorded	Recording conditions / Storage rules
Vehicles used	For each calendar day where the card has been used and for each period of use on a given vehicle on a given day: • Date and time of first use of the vehicle • Vehicle odometer value at that time • Date and time of last use of the vehicle • Vehicle odometer value at that time • Vehicle registration number and registering Member State of the vehicle

Table 35

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Data recorded	Recording conditions / Storage rules
Driver activities	For each calendar day where the card has been used or for which the driver has entered activities manually: • Date • A daily presence counter, increased by one for each of these calendar days • The total distance travelled by the driver during this day • Driver status at 00:00 (Single, Crew) • Whenever the driver has changed activity, and/or has changed driving status, and/or has inserted or withdrawn his card: • Driving status (Single, Crew) • Slot (Driver, co-driver) • Card status (inserted, not inserted) • Activity (Driving, availability, work, break/rest) • Time of the change
Locations where daily work periods start and/ or end	At each entry: • Date and time of the entry • Type of entry (beginning, end) • Country and region entered • Vehicle odometer value Manual entry: • Where appropriate: card number, issuing Member State • Date and time of the entry • Type of entry (beginning, end) • Country and region entered • Vehicle odometer value

Table 35 (continued)

Data recorded	Recording conditions / Storage rules
Events: • Time overlap (on insertion of card, date and time for end of last activity read on the card is later than the current time on SmarTach®) • Card insertion while driving • Last card session not correctly closed • SmarTach® and/or speed sensor power supply interruption • Motion data error • Security breach attempts (except card authentication errors)	For each type of event detected by SmarTach® while the card was inserted: • Type of event • Date and time of beginning of the event • Date and time of end of the event • Vehicle registration number and the registering Member State of vehicle in which the event happened **Storage rules**: The 6 most recent events of each type of event
Faults: • Card faults • Recording equipment faults	At each fault detected by SmarTach® into which the card is inserted: • Type of fault • Date and time of beginning of the fault • Date and time of end of the fault • Vehicle registration number and registering Member State in which the fault happened **Storage rules**: The 12 most recent faults of each type of fault

Table 35 (continued)

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Data recorded	Recording conditions / Storage rules
Control activities	Last control performed while the card is inserted in SmarTach® • Date and time of the control • Control card number and card issuing Member State • Type of the control (displaying and/or printing and/or SmarTach® downloading and/or card downloading) • Period downloaded, in case of downloading • Vehicle registration number and registering Member State of the vehicle in which the control happened
Card session	For the current session opened with SmarTach®: • Date and time the session was opened • Vehicle registration number and registering Member State
Specific conditions	At each entry for the card holder while the card was inserted: • Date and time of the entry • Type of specific condition (out of scope, ferry/train)

Table 35 (continued)

6.6.3 On Company Card

SmarTach® records the data listed in the following table on inserted company cards.

The most recent data replaces the oldest.

For further details, refer to Annex 1B.

Data recorded	Recording conditions, details
Company activities	For each activity: • Date and time of the activity • Type of the activity (beginning/end of locking and/or SmarTach® downloading and/or card downloading) • Period downloaded (if any) • Vehicle registration number and Member State registering authority of vehicle • Card number and issuing Member State (in case of card downloading)

Table 36

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6.7 Access Rights to Data

SmarTach® users are identified thanks to their smart card. SmarTach® gives them selective access rights to functions and data according to their type and/or identity.
SmarTach® can be in one of the four following operating modes:

- Operational mode,
- Control mode,
- Calibration mode,
- Company mode.

The following table gives the operating mode for SmarTach® in relation to the type of valid smart cards inserted in the left and right slots:

Operating mode		Left slot (driver)				
		Empty	Driver card	Controller card	Workshop card	Company card
Right slot (co-driver)	Empty	Operational	Operational	Control	Calibration	Company
	Driver card	Operational	Operational	Control	Calibration	Company
	Control card	Control	Control	Control*	Operational	Operational
	Workshop card	Calibration	Calibration	Operational	Calibration*	Operational
	Company card	Company	Company	Operational	Operational	Company*

Table 37

* In these cases, SmarTach® shall use only the card inserted in the left slot (driver).

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Restrictions on access to the functions are given by the following table:

Function	Only accessible in
Calibration	Calibration mode
Time adjustment	Calibration mode (full access). Other modes (restricted access)
Manual entry	Operational or calibration mode
Company lock management	Company mode
Control activity management	Control mode
Data download	Calibration, company or control modes Operational mode (for remote data download only)

Table 38

All data can be displayed, printed or sent over communication lines. The only exceptions are the following:

When	Description
Operational mode	• Any personal identification (surname and first name(s) not corresponding to a tachograph card inserted) is blanked. • Any card number not corresponding to a tachograph card inserted is partially blanked (every odd character - from left to right - is blanked).
Company mode	Driver related data (insertion and withdrawal of driver cards, driver activities, locations for beginning and end of daily work period) can be output only for periods not locked by another company.
No card is inserted in SmarTach®	Driver related datacan be output only for the current and eight previous calendar days.

Table 39

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6.8 List of Countries and Regions

6.8.1 Countries

The different countries appear in SmarTach® in the following order:

Code	Country
A	Austria
B	Belgium
D	Germany
DK	Denmark
E	Spain
F	France
FIN	Finland
GR	Greece
I	Italy
IRL	Ireland
L	Luxembourg
NL	The Netherlands
P	Portugal
S	Sweden
UK	United Kingdom, Alderney, Guernsey, Jersey, Isle of Man, Gibraltar

Table 40

Code	Country
AZ	Azerbaijan
BG	Bulgaria
BIH	Bosnia-Herzegovina
BY	Belarus
CZ	Czech Republic
EST	Estonia
FL	Liechtenstein
HR	Croatia
KZ	Kazakhstan
LV	Latvia
MD	Republic of Moldova
N	Norway
PL	Poland
RO	Romania
RUS	Russian Federation
SK	Slovakia
SLO	Slovenia
TM	Turkmenistan
AL	Albania
AND	Andorra

Table 40 (continued)

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Code	Country
ARM	Armenia
CH	Switzerland
CY	Cyprus
EUR	Rest of Europe
FR	Faeroe Islands
GE	Georgia
H	Hungary
IS	Iceland
LT	Lithuania
M	Malta
MC	Monaco
MK	Macedonia
RSM	San Marino
TR	Turkey
UA	Ukraine
V	Vatican City
YU	Yugoslavia
WLD	Rest of the world

Table 40 (continued)

6.8.2 Spain Regions

The different regions of Spain appear in SmarTach® in the following order:

Code	Region
AN	Andalusia
AR	Aragon
AST	Asturias
C	Cantabrica
CAT	Catalonia
CL	New Castile
CM	Old Castile
CV	Valencia
EXT	Extramadura
G	Galicia
IB	Balearic Islands
IC	Canaries
LR	Rioja
M	Madrid
MU	Murcia
NA	Navarre
PV	Basque Country

Table 41

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6.9 List of Warnings

6.9.1 ! ▪ INVALID CARD

Event / fault:
Insertion of a non-valid card.
Causes and actions (having acknowledged warning)
If the card is automatically withdrawn on acknowledgement of this warning, there are several possible cases:

Case 1: SmarTach® automatically rejects the card after having acknowledged the warning	**Case 2:** SmarTach® does not reject the card after having acknowledged the warning.
1. Check that it really is a tachograph card. • If not, insert your card. • If it really is a tachograph card, check the validity begin date. The card may not be used before this date. **2.** Check the direction for insertion of the card (chip to the top and arrow directed towards the device), and reinsert the card in the right direction. **3.** If direction of insertion was correct, check that the card is not dirty and repeat attempts at insertion several times if necessary.	The card which has just been inserted has expired, that is, its end of administrative validity date (or end of its certificate validity date) is passed. **No further data can be recorded on this card. The only operations possible with an expired card are: display, print and download of its data.** Check the end of validity date shown on the back of the card. **If this date has been exceeded, the card must be renewed.**

Table 42

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Case 1: SmarTach® automatically rejects the card after having acknowledged the warning	Case 2: SmarTach® does not reject the card after having acknowledged the warning.
4. If none of the above cases are relevant to the problem, try the card with the other card slot on SmarTach® or in another SmarTach®. • If the problem comes from SmarTach®, it must be replaced. • If the problem comes from the card, it must be replaced.	

Table 42 (continued)

Refer to **Section 6.2.1. Compliance with Regulations**.

6.9.2 ! ■■ CARD CONFLICT

Event / fault:
Card conflict.
Causes and actions (having acknowledged warning)
This event is handled differently for a driver card and a company card:

Driver card	Company card
A workshop card was already in SmarTach® before you inserted your card. Withdraw the workshop card from SmarTach®.	**Case 1:** If the company card which is inserted is withdrawn automatically after having acknowledged the warning: • You have inserted your card in the right slot, and there is a company card in the left slot. • Withdraw the latter card. • Insert your card again.
	Case 2: If the inserted card is not withdrawn automatically after having acknowledged the warning: • A company card, workshop card or control card was already in SmarTach® before you inserted your card. • Withdraw the workshop card or control card from SmarTach® (if the other card is a company card it is withdrawn automatically).

Table 43

In any event, return the other card to its owner, or send it to the address marked on the back of the card.

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6.9.3 ! ◷◷ *TIME OVERLAP*

Event / fault:
Time conflict.
Causes and actions (having acknowledged warning)
Date and time of last withdrawal of driver card are later than the current date and time of SmarTach® in which the card is inserted.

- This case arises when the clock of the last tachograph in which the card was used is ahead of the internal clock in the current SmarTach®.
- After having acknowledged the warning, SmarTach® does not allow complete manual entry of activities between withdrawal of the card and its current insertion.

6.9.4 ! ⊙▮ *DRIVING W/O CARD*

Event / fault:
Driving without an appropriate card.
Causes and actions (having acknowledged warning)

There are several possible causes:

You have a driver card.	You have a company card.
Case 1: Vehicle moves off while your driver card is not inserted in the left slot of SmarTach®: • Stop vehicle and withdraw any cards already in SmarTach®. • Insert driver card in the left slot of SmarTach®.	**You may only drive if you have a driver card or workshop card.** Stop vehicle.
Case 2: Vehicle moves off with undesirable combination of cards inserted in SmarTach®. You may only drive if your driver card is inserted in the left slot and if either another driver card or no card is inserted in the right slot. • Stop vehicle and withdraw any cards which cause a problem. • Insert driver card in the left slot of SmarTach®. • Return the other cards to their owners, or send them to the address marked on the back of the cards.	

Table 44

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You have a driver card.	You have a company card.
Case 3: A control card, workshop card or company card is inserted in the right slot of SmarTach® while the vehicle is moving. • Stop vehicle. • Withdraw card which is causing a problem. • If necessary, return card to its owner, or send it to the address marked on the back of the card.	

Table 44 (continued)

6.9.5 ! ⊙ CARD INS WHILE ⊙

Event / fault:
Card insertion while driving.
Causes and actions (having acknowledged warning)
A card has been inserted in SmarTach® while the vehicle was already moving.

6.9.6 ! CARD SESSION ERR

Event / fault:
Last card session not correctly closed.
Causes and actions (having acknowledged warning)
At card insertion SmarTach® detects that the previous card session has not been correctly closed (the card has been withdrawn before all relevant data have been stored on the card). This event is triggered by driver and workshop cards only. After having acknowledged the warning, SmarTach® does not allow complete manual entry of driver activities between withdrawal of the card and its current insertion.

- Make sure that the operations performed with this card on the previous tachograph were performed in compliance with the instructions of this manual.

6.9.7 >> OVERSPEED

Event / fault:
Over-speeding.
Causes and actions (having acknowledged warning)
The vehicle exceeded its maximum authorised speed.

- Reduce speed.
- Have speed limiter checked as soon as possible.

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6.9.8 ! ÷ *POWER INTERRUPT*

Event / fault:
Power supply interruption.
Causes and actions (having acknowledged warning)
SmarTach® or speed sensor power supply has been cut off.

6.9.9 ! ⎍ *MOTION DATA ERROR*

Event / fault:
Motion data error.
Causes and actions (having acknowledged warning)
There are a number of possible causes:

- There is an interruption of the normal data flow between the speed sensor and SmarTach®.
- There is a data integrity or data authentication error during data exchange between the speed sensor and SmarTach®.

A workshop must check SmarTach® and how it is fitted.

Refer to **Section 6.2.1. Compliance with Regulations**.

6.9.10 ! 🔒 *SECURITY BREACH*

Event / fault:
Security breach attempt (Attempt to violate security system).
Causes and actions (having acknowledged warning)
There are a number of possible causes:

- Authentication of card inserted has failed.
- There is a problem with the integrity of the data read from the driver card.

In both cases, once the warning is acknowledged, the card is withdrawn from SmarTach®. The card must be replaced.

Refer to **Section 6.2.1. Compliance with Regulations**.

- There is an authentication problem between SmarTach® and the speed sensor.
- There is a problem with the integrity of the data recorded in SmarTach®.

In both cases, a workshop must check SmarTach® and how it is fitted.

Refer to **Section 6.2.1. Compliance with Regulations**.

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6.9.11 ×1 - ×2 CARD FAULT

Event / fault:
Card fault.
Causes and actions (having acknowledged warning)
A smart card failure occurs during operation.
Once the warning is acknowledged, the card is automatically withdrawn from SmarTach®.

- Try to use the card again in SmarTach® and/or in another SmarTach®.
- If the problem continues, the card must be replaced.

Refer to **Section 6.2.1. Compliance with Regulations**.

6.9.12 × INTERNAL FAULT

Event / fault:
Recording equipment fault.
Causes and actions (having acknowledged warning)
Internal fault in SmarTach®.

- SmarTach® must be checked by a workshop.

Refer to **Section 6.2.1. Compliance with Regulations**.

6.9.13 × PRINTER FAULT

Event / fault:
Recording equipment fault.
Causes and actions (having acknowledged warning)
SmarTach® printer fault.

- Confirm the fault by reprinting several times.
- If the problem continues, SmarTach® must be checked by a workshop.

Refer to **Section 6.2.1. Compliance with Regulations**.

6.9.14 × DOWNLOAD FAULT

Event / fault:
Recording equipment fault.
Causes and actions (having acknowledged warning)
Problems encountered by SmarTach® during a data download.

- Confirm the fault by trying the operation again.
- Check if the downloading tool works correctly with other SmarTachs®.
- If the problem results from SmarTach® itself, it must be checked by a workshop.

Refer to **Section 6.2.1. Compliance with Regulations**.

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6.9.15 × ⎍ SENSOR FAULT

Event / fault:

Recording equipment fault.

Causes and actions (having acknowledged warning)

There is a fault with the speed sensor.

- SmarTach® and the speed sensor must both be checked by a workshop.

Refer to **Section 6.2.1. Compliance with Regulations**.

6.9.16 ▮▶ ⊙ DRIVE > 4h30

Event / fault:

- 15 minutes before 4h30 continuous driving time
- 4h30 continuous driving time

Causes and actions (having acknowledged warning)

There are several possible causes:

- Continuous driving has reached 4h15.
- Stop vehicle before reaching 4h30 of continuous driving.
- Wait for 45 minutes of cumulated rest.
- Continuous driving has reached 4h30.
- Stop vehicle.
- Wait for 45 minutes of cumulated rest.

Refer to **Section 6.2.1. Compliance with Regulations**.

6.10 List of Pictograms Used in this Manual

6.10.1 Pictograms Defined by Annex 1B

Card/Operating Mode

- Company/Company mode
- Controller/Control mode
- Workshop/Calibration mode
- ⊙ Driver/Operational mode

Activities

- ⊙ Driving
- Availability
- Break/Rest
- Work

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Equipment

1 Driver slot
2 Co-driver slot
Card
Clock
Display
Printer/Printout
Vehicle/Vehicle unit

Specific Conditions

OUT Out of Scope
Ferry/Train crossing

Miscellaneous

Start of daily work period
End of daily work period
Location
Security
Time
24h Daily
Weekly
Two weeks
From or to

Cards

Driver card
Company card
No card

6.10.2 Combination of Pictograms Defined by Annex 1B

Driving

Crew driving
Driving time for one week
Driving time for two weeks

Events

Insertion of a non-valid card
Card conflict
Time overlap
Driving without an appropriate card
Card insertion while driving
Last card session not correctly closed
Over-speeding
Power supply interruption
Motion data error
Security breach
Time adjustment (by workshop)
Over-speeding control

Faults

Card fault (driver slot)
Card fault (co-driver slot)
Display fault
Downloading fault
Printer fault
Sensor fault
SmarTach® internal fault

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Manual Entries

- ▶? ▶| Still same daily work period?
- |▶? End of previous work period?
- |▶ ? Confirm or enter location of end of work period
- ◷▶? Enter start time
- ▶? Enter location of start of work period

Miscellaneous

- ▶ Location start of daily work period
- |▶ Location end of daily work period
- OUT→ Out of Scope begin
- →OUT Out of Scope end

6.10.3 Additional Pictograms

- ▶⊙ Driving time over daily work period
- ▶→ Daily work period amplitude
- |▶ Time left to the driver before starting his daily rest period
- →1 Update of data on card 1 before withdrawal
- 2 / 5 Attempt 2 out of 5 to check pin code (5 attempts maximum)
- → Company lock start
- → Company lock end

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6.11 Example: Daily Card Printouts – Drivers Working in Crew

6.11.1 Example Scenario

The example below shows typical printouts from a period driven in crew.

	Driver A	Driver B
Insertion of smard cards for first period	• vehicle 1234 WWA 31 • on 17-04-2003 • at 00:08 UTC • in slot 1	• vehicle 1234 WWA 31 • on 17-04-2003 • at 00:08 UTC • in slot 2
Activity	• Started work and then began to drive from 07:44 • Several rest times were declared during the period until 16:20 when it was time to change drivers.	• Declared available while Driver A is driving • Several rest times were declared during the period until 16:20 when it was time to change drivers.
Insertion of smard cards for second period	• same vehicle and day • at 16:20 UTC • in slot 2	• same vehicle and day • at 16:20 UTC • in slot 1

Table 45

	Driver A	Driver B
Activity	• Declared available while Driver B is driving • Several rest times were declared during this period	• Started to drive from 16:23 • Several rest times were declared during this period
Summary	For the entire day, 23h50 were declared in crew, Driver A drove 368km in 6h44	For the entire day, 23h50 were declared in crew, Driver B drove 259km in 4h42

Table 45 (continued)

For further information about other printouts, refer to Annex 1B.

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6.11.2 Printouts and Detailed Explanations

Item	Explanation
1	ACTIA SmarTach® Printout heading logo
2	Current Print Date & Time (UTC in this case)
3	Type of printout: daily from card
4	Driver Card Identification: Surname, First name, State, Card number, Card validity
5	Vehicle Identification: Vehicle Identification Number, Country, Vehicle Registration Number
6	Tachograph Identification: Brand, Part Number
7	Workshop Card Identification: Workshop name, State, Card number, SmarTach® last Calibration date
8	Control Card Identification (if any): State, Card number, Last Control Date &Time, Type of control
9	Print Day Date, Number relative to the number of days of use of this driver card
10	Previous unknown activities of the day (starting at 00:00 UTC) while card out of tachograph (if any)
11	Activities done with card in slot 1 as driver
11'	Same as 11 with card in slot 2 as co-driver
12	VRN and odometer of the vehicle where card was inserted
13	⊙⊙ to indicate driving in crew, * to indicate more than one hour Rest period has been taken
14	Unknown activities while card out of tachograph
15	Activities done with card in slot 2 as co-driver
15'	Same as 15 with card in slot 1 as driver
16	VRN of the vehicle where card was inserted
17	Cumulative summaries for activities and distance
18	Events and/or Faults stored in the card, Details if any: Fault Type, Date, Time, Duration, VRN
19	Events and/or Faults stored in the SmarTach®, Details if any: Fault Type, Date, Time, Duration, Card #
20	Control place and Controller signature to be filled in by hand (if necessary)
21	Driver signature to be filled in by hand (if necessary)
22	End of printout

Table 46

Table 46 (continued)

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